Balancing and Settlement Code

BSC PROCEDURE

Unmetered Supplies Registered in SMRS

BSCP520

Version 25.0

Date: 30 June 2016

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BSCP520

relating to

Unmetered Supplies Registered in SMRS

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP520, Version 25.0 relating to Unmetered Supplies Registered in SMRS.

3. This BSC Procedure is effective from 30 June 2016.

4. This BSC Procedure has been approved by the Panel.

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AMENDMENT RECORD

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[1] CP1104 was approved by correspondence by SVG (SVG/50/018) for inclusion in version 6.0 of this document, effective on the BETTA Effective Date, but was omitted due to a clerical error.

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1. Introduction

1.1 Scope and Purpose of the Procedure

All energy transfers at points of connection and/or supply via circuits connected to the Licensed Distribution System shall be metered, except in a limited number of defined circumstances. These exceptions, known as Unmetered Supplies (UMS), shall be at the discretion and approval of the Unmetered Supplies Operator (UMSO) of the Licensed Distribution System Operator (LDSO). The UMSO shall only consider providing an UMS at an exit point in accordance with Statutory Instrument (SI) 2001 No. 3263 which states:

(1) Subject to sub-paragraphs (2) and (3), an unmetered supply may be given where:

(a) the electrical load is of a predictable nature, and

(b) either:

(i) the electrical load is less than 500W; or

(ii) it is not practical for a supply of electricity to be given through an appropriate meter at the premises due to:

- the anticipated metering costs in the particular case being significantly higher than the usual metering costs associated with that size of electrical load;
- technical difficulties associated with providing such a meter in the particular case; or
- operation of law so as to prohibit or make excessively difficult the provision of such a meter in the particular case.

(2) Subject to regulation 4, an unmetered supply shall only be given where the authorised distributor, authorised supplier and the customer have agreed to such a supply.

(3) An unmetered supply which does not fall into the categories given in sub-paragraph 1) and which is first given prior to the date on which these Regulations came into force and which has been so supplied since that date, may continue to be an unmetered supply where the authorised distributor, authorised supplier and customer concerned agree to such continuation.

The SI also gives details to the Disputes process.

1.1.1 UMS Connection Agreements and National Terms of Connection

The provision of an UMS, at an exit point, is dependent upon the UMSO having information of sufficient quality to enable the annual energy consumed (by all of the Apparatus connected to the exit point) to be determined and maintained to the level of

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accuracy required by the Code. It is the responsibility of the UMSO to establish appropriate arrangements with the Customer for the procuring and maintenance of such information. It is expected that this will normally be done through a UMS Connection Agreement or will be in accordance with the National Terms of Connection, which among other things, should contain clauses covering:

(a) the periodic submission by the Customer of a Detailed Inventory, the frequency of the submission and its format;

(b) the right of the LDSO to audit the Customer's Unmetered equipment;

(c) the right of the LDSO to install metering and/or data loggers on the Customer's Unmetered equipment; and

(d) a provision that the Customer shall not permit any third party to connect equipment to the Customer's Unmetered installation without the agreement of the LDSO.

1.1.2 Existing Exit Points

Existing exit points are permitted to retain their UMS status provided the consumption from such exit points can be accurately determined. The UMSO will review the unmetered status of such exit points where there is significant work to modify the exit point or there is significant change to the size and nature of the load.

1.1.3 BSC Procedure

This BSC Procedure (BSCP) sets out the requirements for UMS registered in Supplier Meter Registration Service (SMRS). Metering data for Settlement purposes shall be derived utilising either:-

(a) an Equivalent Meter (EM) providing Half Hourly (HH) data; or

(b) an Estimated Annual Consumption (EAC) per Metering System Identifier (MSID) with an appropriate Profile Class and Standard Settlement Configuration (SSC).

1.2 Main Users of Procedure and their Responsibilities

This BSCP should be used by Suppliers, Half Hourly Data Collectors (HHDCs), Non Half Hourly Data Collectors (NHHDCs), Meter Administrators (MAs) and each UMSO.

Appendices 4.1 and 4.2 should be used by Customers, to identify Charge Codes, load ratings, Switch Regime codes, etc.

The SVAA will be managing the Market Domain Data in addition to performing the Supplier Volume Allocation role, and therefore SVAA is the Market Domain Data Manager (MDDM).

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1.2.1 UMSO Responsibilities

Where an UMS has been agreed, each UMSO shall be responsible for the following:-

(a) where the Detailed Inventory is subject to HH trading, providing a copy of the Summary Inventory and/or CMS Control File (as appropriate) to the appointed MA. Agreed updates to the Summary Inventory and/or CMS Control File (as appropriate) will be similarly passed to the appointed MA;

(b) providing Unmetered Supply Certificates;

(c) requesting additional MSIDs from the SMRA where additional inventory items need to be allocated to alternative SSCs and associated Profile Class and passing details of all MSIDs and the associated Meter Timeswitch Class and Profile Class to the Supplier for registration;

(d) where the Detailed Inventory is subject to NHH trading, calculating initial and revised EACs and submitting them to the appointed Supplier and NHHDC;

(e) informing the Supplier and MA of the type of EM (i.e. whether passive or dynamic) to be used in the LDSO's area;

(f) agreeing with the MA the location of any associated photo-electric cell unit (PECU) arrays in accordance with the siting procedures in 4.6.1.1;

(g) agreeing with the MA the latitude and longitude information for the installed Apparatus for each Sub-Meter where an EM is being used;

(h) providing any other additional information required to enable the Supplier to determine the Distribution Use of System (DUoS) charges;

(i) for supporting the Trading Dispute process as required by Section W of the Code;

(j) for responding to any queries raised by the Panel, Supplier, the Supplier Volume Allocation Agent, the Data Collector, the Meter Administrator and / or the BSC Auditor;

(k) providing Suppliers with the data that will enable them to fulfil their obligations under the Code;

(l) notifying Suppliers on discovering that any Settlement data for which the UMSO is responsible is potentially incorrect or missing;

(m) retaining Settlement data in accordance with this BSCP and Party Service Line (PSL) 100 'Non Functional Requirements for Licensed Distribution System Operators and Party Agents';

(n) ensuring that the Customer continues to comply with the conditions for an Unmetered Supply;

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(o) issuing an annual spreadsheet containing all UMS EACs for each MSID split by Settlement Register (using the appropriate Average Fraction of Yearly Consumption) to Suppliers each June, and providing confirmation to BSCCo. that this process has occurred;

(p) resending the correct EAC(s) to the NHHDC upon instruction by the Supplier if Supplier identifies a discrepancy between EACs received from NHHDCs to those received from the UMSO; ~~and~~

(q) validating all Charge Codes, ~~and~~ Switch Regimes and Variable Power Switch Regimes against the Operational Information Document (OID) and associated spreadsheets; ~~.~~ and

(r) ensuring that MSIDs and inventory data for mCMS are kept separate from, and are not combined with, MSIDs or inventories for other UMS Apparatus.

1.2.2 Supplier Responsibilities

The Supplier is responsible for ensuring that a Qualified MA, where an EM is being utilised, and appropriate Qualified Party Agents for data collection and data aggregation, are appointed.

The Supplier is responsible for comparing EACs received from NHHDCs to those received from the UMSO and, if a discrepancy is identified, the Supplier shall in the first instance instruct the UMSO to resend the correct EAC(s) to the NHHDC.

Where necessary the Supplier may subsequently provide the correct EAC(s) direct to the NHHDC.

1.2.3 NHHDC Responsibilities

The NHHDC is responsible for ensuring that new EACs, and any revisions, provided by the UMSO in accordance with BSCP504 are available to the NHHDA to meet the required Volume Allocation Run timescales.

1.2.4 Meter Administrator Responsibilities

In summary, the MA is responsible for the following:-

(a) receiving a copy of the agreed Summary Inventory and/or CMS Control File (as appropriate) of the UMS Apparatus for an MSID, together with agreed updates, from the UMSO;

(b) inputting the Summary Inventory and/or CMS Control File (as appropriate) information into the EM and forwarding an inventory report extracted from the EM to the UMSO and Customer;

(c) using the latitude and longitude information for the MSID appropriate to the installed Apparatus;

(d) validating all Charge Codes and Switch Regimes against the Operational Information Document (OID) and associated spreadsheets;

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(e) ensuring metered data from the EM is available to the HHDC to meet the Volume Allocation Run timescales required by the Supplier;

(f) indicating to the HHDC when data is not available or missing; and

(g) retaining Settlement data in accordance with this BSCP and PSL100 'Non Functional Requirements for Licensed Distribution System Operators and Party Agents'.

1.2.4.1 Recording of Data

The MA shall record sufficient details received from the Supplier of its appointment in respect of a MSID to enable the MA to perform its functions as MA and operate the Equivalent Meter permitted for use within the GSP group by the LDSO. These details shall include:

- the Settlement Days for which the MA is appointed by the Supplier;
- the relevant MSID;
- the Identifier for the HHDC;
- the UMSO providing the Unmetered Supply Certificate for that Metering System;
- the geographical position defined by the UMSO for that MSID or, where these are defined by the UMSO, the geographical positions for related Sub-Meters of the Summary Inventory for that MSID;
- the indicator defined by the UMSO as to whether a PECU array is required for that MSID or for related Sub-Meters of the Summary Inventory where these Sub-Meters are agreed with the UMSO; and
- the energisation status associated with the MSID in Supplier Meter Registration Service;
- the indicator defined by the UMSO as to whether a Central Management System is required for that MSID or for related Sub-Meters of the Summary Inventory and/or CMS Control File (as appropriate) where these Sub-Meters are agreed with the UMSO.

The MA shall record and use such Market Domain Data (MDD) as is considered appropriate by the Panel (having regard to the MA's functions) and shall, in particular, use only MDD for those items in relation to which there is a MDD entry or other information provided by the UMSO where such information does not conflict with MDD.

1.2.4.2 Equivalent Meter Audit Requirements

MAs shall ensure that audit trails are maintained between:

- Equivalent Meter failure reports or energisation/de-energisation requests, and any subsequent actions taken; and

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- data requested and data sent (or received) in relation to transfers of data between outgoing and incoming MAs.

1.2.4.3 Resolution of Queries and Disputes

The MA shall respond to queries raised by the Supplier, UMSO, the Supplier Volume Allocation Agent, the HHDC, the BSC Auditor and the LDSO.

In the event of any dispute as to whether an item of MDD is appropriate or, as the case may be, affects the accuracy of Settlement, the decision of the Panel shall be final.

1.2.4.4 Recording Devices

The MA shall ensure that the import of electrical energy by every MSID to which it is appointed is accurately recorded by the correct use of an Equivalent Meter.

If requested by the LDSO, the MA shall provide details of reactive power as an output from the Equivalent Meter.

1.2.4.5 Systems and Processes

The MA shall use systems and processes so approved in accordance with BSCP537 in the operation of Equivalent Meters. These systems and processes must also comply with all other applicable requirements set out in the Code and other relevant CSDs.

1.2.4.6 Termination of Appointment of Meter Administrator

The MA shall prepare and maintain plans that will enable its Supplier's obligations under the Code to continue to be met notwithstanding the expiry or termination of the MA's appointment as the MA. The plans, which the MA undertakes to implement on any such expiry or termination, will include the immediate transfer of data and other information to an incoming MA appointed by the Supplier or to the Panel.

Details of the processes to be followed when there is a Change of MA are set out in Section 3.4.

1.2.4.7 Summary Inventories and CMS Control File

The MA shall record a history of the Summary Inventories and CMS Control Files and their effective dates input to the Equivalent Meter.

Details of the processes to be followed for new and updated Summary Inventories and CMS Control Files are described in more detail in Sections 3.1 and 3.2 of this document.

Where the Summary Inventory or CMS Control File is not provided by the UMSO or is not relevant to a half hourly unmetered Measurement Class the MA shall request the UMSO to provide the correct information and inform the associated Supplier if it is not provided in time to allow data to be submitted for the Initial Settlement Run for any MSID to which the MA has been appointed.

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1.2.5 Approval of Categories of Apparatus, Charge Codes and Switch Regimes

The Panel, or its nominated representatives, approve additions or alterations to the categories of Apparatus, Charge Codes and their associated load rating (and dimming level load rating if applicable) and Switch Regimes in respect of static dimming equipment. Proposals for approval, and for load research (regarding associated load ratings and/or dimming level load rating) to be initiated, will be recommended by the Balancing and Settlement Code Company (BSCCo) to the Panel for approval. The Panel, or its nominated representatives, may request that the Unmetered Supplies User Group (UMSUG) meets from time to time to discuss issues relating to profiles, Switch Regimes, SSC, EACs, Equivalent Meters, protocols, Charge Codes and general UMS issues.

The Panel, or its nominated representatives, shall agree (and may from time to time amend) the requirements for test data from applicants for Charge Codes and Switch Regimes. BSCCo will from time to time update the OID to provide applicants with guidance on these requirements.

BSCCo will be responsible for constructing Charge Codes and Switch Regimes in accordance with this BSCP and with the conventions agreed (and from time to time amended) by the Panel or its nominated representatives. BSCCo will periodically update the OID to provide applicants with guidance on any recent additions or amendments to these conventions. BSCCo will be responsible for the notification of Panel decisions.

BSCCo will process applications and construct Charge Codes where the intention of the applicant is to connect or market the Apparatus nationally. For clarity, 'nationally' means in GSP Groups controlled by more than one UMSO. Where the Apparatus is intended for use solely within a single UMSO's GSP Group(s), an application to the Panel via BSCCo is not required.

1.2.6 Approval of an Equivalent Meter

Equivalent Meter shall be approved as defined in 3.13 and will comply with the Technical Specification for an EM as defined in 4.~~5~~6.

1.3 Use of the Procedure

This BSCP shall be followed when it is agreed that the exit point qualifies to be energised without a Meter and is therefore an UMS.

1.3.1 Inventory of Unmetered Apparatus

One of the criteria for agreeing an UMS is that the Customer shall be required to provide and maintain an accurate, Detailed Inventory as agreed with the UMSO.

Any requirement for additional classifications of Apparatus, load rating information and Switch Regimes shall be referred to BSCCo.

Following approval by the Panel, the UMSO shall implement any revisions applicable to changes of classifications of Apparatus, Switch Regimes and load ratings (including dimming level load rating where appropriate) relating to UMS.

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The UMSO and MA shall also implement any Charge Codes issued by BSCCo.

1.3.2 Allocation of MSIDs

Where an UMS is to be traded on a HH basis, the UMSO will obtain a unique MSID per UMS Certificate from SMRA.

For all other UMS, a unique MSID per SSC per UMS Certificate will be provided by SMRA.

1.3.3 Identification of SSCs, Profile Classes and AFYCs

The number of SSCs and the associated Profile Class, Average Fraction of Yearly Consumption (AFYC) and Switch Regimes can be identified from the Summary Inventory, using the following as a basis:-

(a) flat UMS (category A);

(b) dusk to dawn UMS (category B);

(c) half night and pre-dawn UMS (category C);

(d) dawn to dusk UMS (category D); and

(e) UMS with a specific TPR (category E) shall be allocated to the appropriate Profile Class, SSC and AFYC.

The Operational Information Document (OID) provides guidance on the allocation of Apparatus to the different categories and details for categories A to E.

1.3.4 Calculation and Issuing of EACs

For each UMS Certificate where the supply is not being traded on a HH basis the UMSO shall calculate an EAC per MSID, in accordance with the procedure set out in Appendix 4.4.

The EAC(s) shall be entered on the UMS Certificate. The UMSO shall provide the EAC(s) to the appointed Supplier and the appropriate NHHDC split by Settlement Register using the appropriate AFYC, to meet Volume Allocation Run timescales.

The UMSO shall issue an annual spreadsheet detailing all UMS EACs for each MSID split by Settlement Register in June of each year to the appropriate Supplier so that discrepancies between this data and data held in Settlement can be identified and corrected.

The UMSO shall recalculate any EAC affected by a revision to the Detailed Inventory when that revision has been agreed with the Customer. The revised EAC, appropriately split, shall be issued to the appointed Supplier and appropriate NHHDC to meet Volume Allocation Run timescales.

Evidence to support the calculation of the EAC shall be retained by the UMSO for inspection, on request, by the BSC Auditor and Supplier, or their Party Agents.

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1.3.5 UMS Certificate

The UMSO shall issue an UMS Certificate to the Customer for each agreed Detailed Inventory, which may cover multiple exit points. A copy of the UMS Certificate shall be provided to the appointed Supplier, as required.

The UMS Certificate will contain the following minimum information:-

(a) name of the LDSO;

(b) issue date;

(c) Effective From Date;

(d) title and/or reference of the Summary Inventory and/or CMS Control File (as appropriate);

(e) the MSID(s), Profile Class Id, Meter Timeswitch Class Id and LLF Class Id;

(f) if NHH profiled, then the EAC(s) for each MSID; and

(g) any other information required for determining DUoS charges.

1.3.6 Method of Trading

The Supplier appointed to an MSID shall be responsible for ensuring that the metered data is provided on a HH or Non-Half Hourly (NHH) basis. The Supplier cannot change the method of trading an MSID unless a new UMS Certificate is issued by the UMSO as permitted by the UMS Connection Agreement or the National Terms of Connection.

Prior to sending the registration details for an UMS MSID to SMRA the Supplier shall ensure that the UMS Certificate is consistent with the proposed method of trading. A Supplier must register at the same time all MSIDs on the one UMS Certificate.

1.3.7 Non-Half Hourly Trading

The Supplier shall appoint Party Agents and send the registration details to SMRA. In addition the Supplier shall nominate the UMSO as the Meter Operator Agent (MOA) and notify SMRA. The UMSO shall provide the EAC per Settlement Register calculated as per Appendix 4.4, SSC, Meter Timeswitch Class and Profile Class information for each MSID to the appointed Supplier and the appropriate NHHDC. Where an MSID is allocated for a temporary UMS which is being used for up to 3 or 4 periods of the year only (e.g. Christmas lighting), the appointed Supplier shall follow the Energisation and De-energisation procedures at the time(s) of connection and disconnection respectively. This is distinct from temporary supplies connected and disconnected frequently throughout the year on a random basis (e.g. temporary traffic lights), where the UMSO will calculate the EAC on an agreed number of annual operating hours, in consultation with the Customer.

1.3.8 Half Hourly Trading

The Supplier shall appoint Party Agents and send the registration details to SMRA. In addition the Supplier shall nominate the MA as the Meter Operator Agent (MOA).

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~~The Supplier shall appoint Party Agents and send the registration details to SMRA. In addition the Supplier shall nominate the MA as the Meter Operator Agent (MOA).~~

The Supplier shall advise the UMSO of the appointed MA. The UMSO shall send a copy of the current Summary Inventory to the MA appointed for an MSID for all non CMS controlled equipment. Where the UMSO requires more than one PECU array to be installed for an MSID, the Summary Inventory shall identify the Apparatus, suitably codified with a different Sub-Meter assigned to each PECU array. Where a CMS is required, the UMSO shall create and send a CMS Control File to the MA detailing the Apparatus that is to be managed by the CMS.

In addition, any agreed updates to the Summary Inventory or any CMS Control File shall be advised to the appointed MA.

1.4 Other Sections within the BSCP

The remaining sections in this document are:

Section 2 - This section is no longer in use.

Section 3 - Interface and Timetable Information:- this section defines in detail the requirements of each business process. The MA cannot send flows using the Data Transfer Service (DTS).

The UMSO can only send and receive flows using the DTS by utilising the LDSO role code. Where Section 3 identifies either the UMSO and/or the MA being the sender/and or recipient of a 'D' flow, the data items to be provided will be as included in the BSC SVA Data Catalogue, however the method of sending the information will be manual e.g. e-mail. In any event the method shall be agreed between Parties/Party Agents in advance.

Section 4 - Appendices: this section provides supporting information to this BSCP.

1.5 Balancing and Settlement Code Provision

This BSCP has been produced in accordance with the provisions of the Balancing and Settlement Code (the Code), and in particular the provisions of Section S8 'Unmetered Supplies' which, amongst other things, state that:

- the UMSO shall determine whether a supply of electricity to a particular Detailed Inventory should be treated as an Unmetered Supply;
- for Unmetered Supplies the UMSO shall issue an Unmetered Supplies Certificate;
- the UMSO will agree a Detailed Inventory with the Customer and will prepare a Summary Inventory and/or CMS Control File (as appropriate) from the Detailed Inventory;
- for each Profiled (NHH) Unmetered Supply the UMSO shall calculate an EAC and notify the Supplier or Supplier Agent of the value of the EAC;

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- following a material change to the Detailed Inventory to which a UMS Certificate relates the UMSO shall provide:
  - a new Summary Inventory and/or a new CMS Control File (as appropriate) for an Equivalent (HH) Unmetered Supply; or
  - a new EAC in the case of a Profiled (NHH) Unmetered Supply; and
- changing the treatment of an Unmetered Supply from an Equivalent (HH) Unmetered Supply to a Profiled (NHH) Unmetered Supply (or vice versa) shall only be made if the relevant Unmetered Supply Certificate is cancelled and a new Unmetered Supply Certificate is issued in its place.

In the event of an inconsistency between the provisions of this BSCP and the Code, the provisions of the Code shall prevail.

1.6 Associated BSC Procedures

BSCP40	Change Management.
BSCP501	Supplier Meter Registration Service.
BSCP502	Half Hourly Data Collection for SVA Metering Systems Registered in SMRS.
BSCP504	Non-Half Hourly Data Collection for SVA Metering Systems Registered in SMRS.
BSCP509	Changes to Market Domain Data.
BSCP515	Licensed Distribution.
BSCP537	Qualification Process for SVA Parties, SVA Party Agents and CVA MOAs.

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1.7 Acronyms and Definitions

1.7.1 Acronyms

The terms used in this BSCP are defined as follows:

AFYC	Average Fraction of Yearly Consumption
BSC	Balancing and Settlement Code
BSCCo	Balancing and Settlement Code Company
BSCP	Balancing and Settlement Procedure
CMS	Central Management System
DUoS	Distribution Use of System
EAC	Estimated Annual Consumption
EFD	Effective From Date
EM	Equivalent Meter
GSP	Grid Supply Point
HH	Half Hourly
HHDA	Half Hourly Data Aggregator
HHDC	Half Hourly Data Collector
Id	Identifier
kVArh	Kilovolt Ampere Reactive Hour
kWh	Kilowatt Hour
LDSO	Licensed Distribution System Operator
LF	Load Factor
LLF	Line Loss Factor
MA	Meter Administrator
mCMS	Measured Central Management System
MDD	Market Domain Data
MDDM	Market Domain Data Manager
MOA	Meter Operator Agent
MSID	Metering System Identifier
NHH	Non-Half Hourly
NHHDA	Non-Half Hourly Data Aggregator
NHHDC	Non-Half Hourly Data Collector
OID	Operational Information Document
PECU	Photo Electric Control Unit
SMRA	Supplier Meter Registration Agent
SMRS	Supplier Meter Registration Service
SSC	Standard Settlement Configuration
SSD	Supply Start Date
SVA	Supplier Volume Allocation
TPR	Time Pattern Regime
UMS	Unmetered Supplies
UMSO	Unmetered Supplies Operator of the LDSO
UMSUG	Unmetered Supplies User Group
UTC	Co-ordinated Universal Time
W	Watts
WD	Working Day

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1.7.2 Definitions

Full definitions of the above acronyms and other defined terms used in this BSCP are, where appropriate, included in the Code. For clarification, definitions are provided below for terms specifically associated with UMS:-

"Apparatus" means all equipment in which electrical conductors are used, supported or of which they may form part;

"Applicant" means a person applying to the BSCCo for a Charge Code, Switch Regime code or for Equivalent Meter approval;

"Astronomical Almanac" means the Astronomical Almanac published annually by the Stationery Office or other suitable publication;

"Central Management System" means a system that is able to dynamically control and manage the electrical load used by Apparatus registered as an Unmetered Supply;

"CMS Control File" means a summarised version (as described in 4.~~5~~6.3.3) of the Detailed Inventory of CMS controlled Apparatus provided to the UMSO by the Customer where appropriate;

"Charge Code" means a 13 digit numeric code assigned to unmetered Apparatus that specifies the associated circuit watts and other technical information for the Apparatus;

"Dawn" means 30 minutes before Sunrise;

"Detailed Inventory" means an inventory of Apparatus as specified in the Section titled Standard File Format for Detailed Inventories in the Operational Information Document;

"Dusk" means 30 minutes after Sunset;

"Equivalent Meter" means the hardware and software as defined in Section 1.2.6;

"Equivalent Meter UMS" means HH Unmetered Supplies;

"MA System" means the software and hardware operated by the Meter Administrator and used to calculate half hourly consumption;

"Measured Central Management System" means a subset of Central Management System that is able to use feedback from an active measuring device to dynamically control and manage the electrical load used by UMS Apparatus;[2]

"PECU array" means the hardware described in Appendix 4.~~5~~6;

"Percentage Dimming Level" means the percentage of its full load circuit loading (watts) at which the Apparatus is operating;

[2] Measured Central Management Systems (mCMS) shall not be used for controlling street lighting. Apparatus that controls street lighting can use active measurement but must follow the testing and approval process for CMS rather than mCMS. BSCCo may from time to time update the Operational Information Document (OID) to provide further guidance on the uses of mCMS.

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"Sub-Meter" means that within an Equivalent Meter there is more than one PECU array or more than one Summary Inventory or CMS Control File associated with an MSID;

"Summary Inventory" means a summarised version (as described in 4.6.5) of the Detailed Inventory provided to the UMSO by the Customer excluding the CMS controlled Apparatus where appropriate;

"Sunrise" means the time when the sun's apparent disc is below and tangential to the horizon at sea level and to the east of the observer;

"Sunset" means the time when the sun's apparent disc is below and tangential to the horizon at sea level and to the west of the observer;

"Switch Regime" means a 3 digit numeric code assigned to unmetered Apparatus that specifies the switching times and other technical information for the Apparatus;~~.~~

"Variable Power Switch Regime" means a type of Switch Regime assigned to unmetered Apparatus, and identified by a 3 digit alphanumeric code, that specifies the switching times, dimming times, power levels and other technical information for the Apparatus.

2. Not Used

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3. Interface and Timetable Information

3.1 Establishment of a New UMS Inventory[3]

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.1		Agree that the application for UMS meets the requirements of Section 1.1. ~~Validate all Charge Codes and Switch Regimes against the Operational Information Document (OID) and associated spreadsheets.~~ ~~Agree the Detailed Inventory with the Customer.~~	UMSO.	Customer.	Signed UMS Connection Agreement. ~~Customer's Approved Detailed Inventory.~~	Paper, fax or electronic media, as agreed.
3.1.2	Within 15 WD of completing 3.1.1 or receiving the Customer's proposed Detailed Inventory, whichever occurs later.	Validate all Charge Codes and Switch Regimes against the OID and associated spreadsheets. If the proposed Detailed Inventory passes validation, agree the inventory and proceed to step 3.1.3. Otherwise reject the inventory and, if subsequently resubmitted by the Customer, repeat this step within 15 WD of the resubmission.	UMSO.	Customer.	Customer's proposed Detailed Inventory. Confirmation that Detailed Inventory is valid or, if invalid, reasons for rejection.	Paper, fax or electronic media, as agreed.
3.1.3~~2~~		Is UMS to be traded HH? If so, proceed to 3.1.4~~3~~. If UMS not HH, proceed to 3.1.1~~87~~.	UMSO.		Notification received from Supplier or Customer.	Internal Process.
3.1.4~~3~~	If HH.	UMSO request new MSID.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.1.5~~4~~		SMRA Allocate MSID per UMS Certificate.	SMRA.			Internal Process

[3] This process shall be followed where a new additional inventory is provided by the Customer.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.65		Create skeleton, record details of MSID in accordance with BSCP501. Send MSID(s) to UMSO.	SMRA.	UMSO.	P0171 Request Creation of UMS Skeleton SMRS Record.	Internal Process. Paper, fax or electronic media, as agreed.
3.1.76		Complete UMS Certificate. Issue to Customer. Issue to Supplier, if appointed by the Customer earlier on in the process.	UMSO.	Customer, Supplier.	P0170 HH Unmetered Supply Certificate.	Internal Process. Paper, fax or electronic media, as agreed.
3.1.87	On Customer or Supplier request.	Request from the UMSO the type of EM (Passive or Dynamic) and agree the location, if any, of the PECU array(s) and other factors relevant to the PECU Array Siting Procedure in 4.6.1.1.	MA	UMSO.		Paper, fax or electronic media, as agreed.
3.1.98	Within 5 WD of 3.1.87.	Agree the Sub-Meter ID(s), type of EM (Passive or Dynamic) and the location, if any, of the PECU array(s) in accordance with the provision of the PECU Array Siting procedures in 4.6.1.1. Provide latitude and longitude information to MA.	UMSO.	MA.	Type of EM and agreed latitude and longitude or geographic co-ordinates.	Paper, fax or electronic media, as agreed.
3.1.109		Send Supplier and registration details to SMRA.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point. Including MA MPID in MOA Id data item (J0178)	Electronic or other agreed method.
3.1.110		Record details for MSID in accordance with BSCP501.	SMRA.			Internal Process.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.121		Send appointment details and additionally EM details to relevant recipients.	Supplier.	MA. HHDC. HHDA.	D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.1.132	Within 5 WD following 3.1.121.	Send Summary Inventory details to MA.	UMSO.	MA.	Summary Inventory File and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.1.143	Within 5 WD validate Summary Inventory against OID. If inventory fails validation.	Reject Summary Inventory and await new Summary Inventory.	MA.	UMSO.	List of invalid Charge Codes and/or Switch Regimes.	Electronic or other agreed method.
3.1.154	If Summary Inventory passes validation.	Input into EM and send copy of Summary Inventory extracted from the MA System to UMSO and to Customer.	MA.	UMSO, Customer.	Report of Summary Inventory and/or CMS Control File content.	Internal Process. Paper, fax or electronic media, as agreed.
3.1.165	If unable to send HH data before SSD.	Inform the Supplier of an EM fault (as set out in 3.14.1).	MA.	Supplier. HHDC.		Electronic or other agreed method.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.176	Prior to SSD or Energisation Date whichever is later.	Liaise with HHDC to ensure data from EM can be processed.	MA.	HHDC.	D0003 Half Hourly Advances or Section 4.65.4 EM Output File[4] (trial data see 3.15).	Electronic or other agreed method.
3.1.1817	After 3.1.32 for NHH.	Request new MSID per SSC.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.1.1918		Allocate MSIDs per SSC per UMS Certificate. Create skeleton record details of MSIDs in accordance with BSCP501.	SMRA.			Internal Process.
3.1.2019		Calculate EACs, complete UMS Certificate. Issue UMS Certificate to Customer and Supplier if appointed earlier on in the process.	UMSO.	Customer, Supplier	P0207 NHH Unmetered Supply Certificate.	Internal Process. Paper, fax or electronic media, as agreed.
3.1.210		Send Supplier and registration details to SMRA for all listed MSIDs.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	
3.1.221		Record details for all of the MSIDs in accordance with BSCP501.	SMRA.			Internal Process.
3.1.232		Send appointment details.	Supplier.	NHHDC. NHHDA.	D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.

[4] The EM Output file can only be used if a secure method of data transfer has been agreed between the MA and the HHDC,

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.243		Send split EAC, Profile Class and SSC details for each MSID.	UMSO.	Supplier, NHHDC.	D0052 Affirmation of Metering System Settlement Details.	Electronic or other agreed method.
3.1.254	On receipt of D0052.	Validate D0052.	NHHDC.		In accordance with BSCP504 Non-Half Hourly Data Collection.	Internal Process.
3.1.265	If D0052 is invalid.	Send notification of invalid Metering System Settlement details.	NHHDC.	UMSO, Supplier.	D0310 Notification of Failure to Load or Receive Metering System Settlement Details.	Electronic or other agreed method.

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3.2 Amendment to Inventory

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.1	When change(s) to unmetered Apparatus.	Send proposed revised Detailed Inventory to UMSO.	Customer.	UMSO.	Customer's proposed revised Detailed Inventory.	Paper, fax or electronic media, as agreed.
3.2.2	Within 15 WD of 3.2.1.	Validate all Charge Codes and Switch Regimes against the OID and associated spreadsheets.~~Ensure revision to the Detailed Inventory meets the requirements of Section 1.1 and also agree the revised Detailed Inventory with Customer.~~ If the proposed revised Detailed Inventory passes validation, agree the inventory and proceed to step 3.2.3. Otherwise reject the inventory and repeat steps 3.2.1 and 3.2.2 as required.	UMSO.	Customer.	If validation passed, Customer's Approved Detailed Inventory with agreed EFD. If validation failed, reasons for rejection.	Paper, fax or electronic media, as agreed.
3.2.3	If HH following 3.2.2, when UMSO has agreed amendment to Summary Inventory with Customer, then within 5 WD.	Send revised Summary Inventory details to MA.	UMSO.	MA.	Summary Inventory File and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.2.4	If items exist in the updated Summary Inventory and/or CMS Control File (as appropriate) for which no data on load and switching times have been defined.	Reject updated Summary Inventory and/or CMS Control File (as appropriate), listing invalid Charge Codes and/or Switch Regimes to the UMSO and continue to use or re-apply previous Summary Inventory and/or CMS Control File (as appropriate).	MA.	UMSO.	List of invalid Charge Codes and/or Switch Regimes.	Electronic or other agreed method.
3.2.5	Within 5 WD of receipt or by the EFD.	Input and send copy of Summary Inventory and/or CMS Control File (as appropriate) extracted from the MA System to UMSO and Customer.	MA.	UMSO, Customer.	Report of Summary Inventory and/or CMS Control File content.	Internal Process. Paper, fax or electronic media, as agreed.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.6	After 3.2.2 for NHH.	If required request additional MSID(s) per SSC.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.2.7		Where appropriate allocate additional MSID(s) per SSC. Create skeleton record details of MSID(s) in accordance with BSCP501.	SMRA.			Internal Process.
3.2.8		Send MSID(s) to UMSO.	SMRA.	UMSO.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.2.9		Calculate revised EACs. Complete UMS Certificate. Issue to Customer and Supplier.	UMSO.	Customer, Supplier.	See Appendix 4.4. P0207 NHH Unmetered Supply Certificate.	Paper, fax or electronic media, as agreed.
3.2.10		As required, for any MSID(s) with zero EACs follow de-energisation and Disconnection process as set out in (3.7) and (3.8) respectively. Send to SMRA for any additional listed MSIDs.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	
3.2.11		Record details in accordance with BSCP501.	SMRA.			Internal Process.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.12		Where appropriate, send appointment details.	Supplier.	NHHDC. NHHDA.	D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.2.13		Send revised split EAC, Profile Class and SSC details for each MSID.	UMSO.	Supplier, NHHDC.	D0052 Affirmation of Metering System Settlement Details.	Electronic or other agreed method.
3.2.14	On receipt of D0052.	Validate D0052.	NHHDC		In accordance with BSCP504 Non-Half Hourly Data Collection.	Internal Process.
3.2.15	If D0052 is invalid.	Send notification of invalid Metering System Settlement details.	NHHDC	UMSO, Supplier	D0310 Notification of Failure to Load or Receive Metering System Settlement Details.	Electronic or other agreed method.

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3.3 Change of Supplier

3.3.1 Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.1.1	By SSD – 1 WD.	Establish with the UMSO that the UMS meets the requirements of Section 1.1.	New Supplier.	UMSO.	UMS Connection Details.	Paper, fax or electronic media, as agreed.
3.3.1.2		Send agreed UMS Certificate	UMSO	New Supplier	P0170 HH Unmetered Supply Certificate.	Electronic or other agreed method.
3.3.1.3		Send Supplier and registration details to SMRA for all listed MSIDs.	New Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	Electronic or other agreed method.
3.3.1.4		Send appointment details to relevant recipients.	Supplier.	HHDC. HHDA. MA.	D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties.	Electronic or other agreed method.
3.3.1.5	If Change of Supplier concurrent with changes to EM or PECU Array siting	Agree the Sub-Meter ID(s), type of EM (Passive or Dynamic) and the location, if any, of the PECU array(s) in accordance with the provision of the PECU Array siting procedures in 4.6.1.1. Provide latitude and longitude information to MA.	UMSO.	MA.	Type of EM and agreed latitude and longitude or geographic co-ordinates.	Paper, fax or electronic media, as agreed.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.1.6	If New MA	See Sections 3.4.3 to 3.4.65				
3.3.1.7	If New DC	See Sections 3.5.2 to 3.5.3				
3.3.1.8		Send appointment termination details.	Old Supplier.	Old MA. Old HHDC. Old HHDA.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.
3.3.1.9		Send Summary Inventory and/or CMS Control File (as appropriate) to MA. See Section 3.4.3	UMSO.	MA.	Summary Inventory File and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.3.1.10	If items exist in the updated Summary Inventory and/or CMS Control File (as appropriate) for which no data on load and switching times have been defined.	Reject Summary Inventory and/or CMS Control File (as appropriate), listing invalid Charge Codes and/or Switch Regimes to the UMSO and continue to use or re-apply previous Summary Inventory and/or CMS Control File (as appropriate).	MA.	UMSO.	List of invalid Charge Codes and/or Switch Regimes.	Internal Process Paper, fax or electronic media, as agreed.
3.3.1.11	If New MA, Prior to SSD or Energisation Date whichever is later.	Liaise with HHDC to ensure data from EM can be processed.	MA.	HHDC.	D0003 Half Hourly Advances **OR** Section 4.56.34 EM Output File[44] or trial data (see 3.15).	Electronic or other agreed method.
3.3.1.12	If concurrent with change of MA	Liaise with old HHDC to ensure data from EM is obtained up to end date.	Old MA.	Old HHDC.		Electronic or other agreed method.

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3.3.2 Non-Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.2.1	By SSD – 1 WD.	Establish with the UMSO that the UMS meets the requirements of Section 1.1.	New Supplier.	UMSO	UMS connection details.	Paper, fax or electronic media, as agreed.
3.3.2.2		Send agreed UMS Certificate	UMSO.	New Supplier	P207 NHH Unmetered Supply Certificate	Electronic or other agreed method.
3.3.2.3		Send Supplier and registration details to SMRA for all listed MSIDs.	New Supplier	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	Electronic or other agreed method.
3.3.2.4		Record details for all of the MSIDs in accordance with BSCP501.	SMRA.			Internal Process.
3.3.2.5		Send appointment details and details of previous Supplier's NHHDC to relevant recipients.	New Supplier.	New NHHDC. New NHHDA.	D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. Appointment and Terms D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.3.2.6		Send appointment termination details.	Old Supplier.	Old NHHDC. Old NHHDA.	D0151 Termination of Appointment or Contract by Supplier. D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.2.7	Within 5 WD of SSD or receipt of D0148, whichever is later	Request from old NHHDC details of split EAC, Profile Class and SSC details for each MSID.	New NHHDC.	Old NHHDC.	D0170 Request for Metering System Related Details.	Electronic or other agreed method.
3.3.2.8		Send requested details for each MSID.	Old NHHDC.	New NHHDC.	D0152 Metering System EAC/AA Historical Data.	Electronic or other agreed method.

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3.4 Change of MA

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.4.1		Send details of appointed MA.	Supplier.	HHDC. New MA.	D0148 Notification of Change to Other Parties. D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms.	Electronic or other agreed method.
3.4.2		Send appointment termination details to old MA.	Supplier.	Old MA.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.
3.4.3		Send New MA details to SMRA	Supplier.	SMRA.	D0205 Update Registration Details Including MA MPID in MOA Id data item (J0178)	Electronic or other agreed method.
3.4.4		Send Summary Inventory and/or CMS Control File (as appropriate) details to MA.	UMSO.	New MA.	Summary Inventory and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.4.5		Request sufficient information to enable the incoming MA to assume responsibility for the MSID. This data may exclude that data provided by the Supplier pursuant to paragraph 1.2.4.1.	New MA.	Old MA.	As agreed.	Electronic or other agreed method.
3.4.6		Transfer information.	Old MA.	New MA.	As agreed.	Electronic or other agreed method.
3.4.7	On appointment.	For each MSID, use the EM to determine the HH kWh consumption (and kVArh if requested by the UMSO) by MSID.	New MA.			Internal Process.

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3.5 Change of Data Collector for an existing MSID when not concurrent with Change of Supplier

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.5.1		Send new HHDC or NHHDC registration details to SMRA.	Supplier.	SMRA.	D0205 Update Registration Details.	Electronic or other agreed method.
3.5.2	If HH	Send details of appointed HHDC.	Supplier.	MA. New HHDC. If New HHDA	D0148 Notification of Change to Other Parties. D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Term	Electronic or other agreed method.
3.5.3		Liaise with both HHDCs to ensure data from EM is obtained to/from transition date.	MA.	New HHDC. Old HHDC.	Appendix 4.65.4 EM Output File or trial data (see 3.15).	Electronic or other agreed method.
3.5.4		Send appointment termination details to old HHDC.	Supplier.	Old HHDC.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.
3.5.5	If NHH.	Send appointment details of new NHHDC and details of previous Supplier's NHHDC.	Supplier.	New NHHDC.	D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms.	Electronic or other agreed method.
3.5.6		Send appointment termination details of old NHHDC.	Supplier.	Old NHHDC.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.5.7		Send request for Old NHHDC to provide details of split EAC, Profile Class and SSC details for each MSID to New NHHDC.	Supplier.	Old NHHDC.	D0170 Request for Metering System Related Details.	Electronic or other agreed method.
3.5.8		Send details for each MSID.	Old NHHDC.	New NHHDC.	D0152 Metering System EAC/AA Historical Data.	Electronic or other agreed method.
3.5.9		Request from New NHHDC details of split EAC, Profile Class and SSC details for each MSID.	Supplier.	New NHHDC.	D0170 Request for Metering System Related Details.	Electronic or other agreed method.

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3.6 Change of Measurement Class

3.6.1 Change from Non-Half Hourly to Half Hourly Trading or from Half Hourly to Non-Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.6.1.1		Supplier to apply to UMSO for a new UMS Certificate.	Supplier.	UMSO.		Paper, fax or electronic media, as agreed.
3.6.1.2		Follow Establishment of a New UMS inventory as set out in (3.1).				
3.6.1.3		For previously existing MSID(s) follow de-energisation and Disconnection processes as set out in (3.7) and (3.8) respectively.				

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3.7 Change of Energisation Status of an MSID

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
If HH						
3.7.1	As required or on receipt of a D0134.	Confirm to Supplier and MA actual energisation or de-energisation date.	UMSO.	MA. Supplier.	D0139 Confirmation or Rejection of Energisation Status Change. D0139 Confirmation or Rejection of Energisation Status Change.	Electronic or other agreed method. Electronic or other agreed method.
3.7.2		Notify SMRA of energisation or de-energisation date for an MSID.	Supplier.	SMRA.	D0205 Update Registration Details	Electronic or other agreed method.
3.7.3		Notify HHDC of energisation or de-energisation date for an MSID.	MA.	HHDC.	D0139 Confirmation or Rejection of Energisation Status Change.	Electronic or other agreed method.
3.7.4		Liaise with HHDC to stop or start obtaining data.	MA.	HHDC.		Paper, fax or electronic media, as agreed.
3.7.5	On change of energisation status.	Set the output of the EM to zero for each MSID that has been de-energised or start Collection Activities see 3.9.1	MA			Internal Process.
If NHH						
3.7.6	As required or on receipt of a D0134.	Confirm to Supplier and NHHDC actual energisation or de-energisation date.	UMSO.	NHHDC. Supplier.	D0139 Confirmation or Rejection of Energisation Status Change.	Electronic or other agreed method. Electronic or other agreed method.
3.7.7		Notify SMRA of energisation or de-energisation date for an MSID(s).	Supplier.	SMRA.	D0205 Update Registration Details.	Electronic or other agreed method.
3.7.8		Update record for MSID as per BSCP501.	SMRA.			Internal Process.

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3.8 Disconnection of an MSID[5]

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.8.1		Request UMSO to Disconnect an MSID, identifying whether any physical work is required.	Supplier.	UMSO.	D0132 Request for Disconnection of Supply.	Paper, fax or electronic media, as agreed.
3.8.2	On receipt of D0132 or as determined by the UMSO.	Complete any physical work as required. Send actual Disconnection date.	UMSO.	SMRA. Supplier.	P0175 Request to SMRA to Disconnect a UMS Metering Point. D0125 Confirmation of Disconnection of Supply.	Internal Process. Paper, fax or electronic media, as agreed.
3.8.3		Update record for MSID as per BSCP501.	SMRA.	Supplier.	D0171 Notification of LDSO Changes to Metering Point Details.	.
3.8.4	If HH.	Notify MA, HHDC and HHDA of appointment termination date for an MSID.	Supplier.	MA. HHDC. HHDA.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.
3.8.5	If NHH.	Send appointment termination date for an MSID.	Supplier.	NHHDC. NHHDA.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.

[5] D0132s received that relate to partial disconnection of an MSID should be rejected and referred back to the Supplier. Any such changes should instead be initiated by the provision of a revised Detailed Inventory to the UMSO.

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3.9 Collection Activities

3.9.1 Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.9.1.1	As agreed with Suppliers schedule.	Produce, validate or recalculate[6] metering data from the EM for each MSID for each Settlement Day.	MA.			Internal Process.
3.9.1.2	At such time as to allow the HHDC to obtain the data and carry out its obligations to ensure that the correct data is used for the purpose of the Initial Volume Allocation Run.	MA to notify HHDC of metering data.	MA.	HHDC.	D0003 Half Hourly Advances **OR** Section 4.65.4 EM Output File[44].	Electronic or other agreed method.
3.9.1.3	If data is missing or invalid.	Resolve any missing or invalid data with MA.	HHDC.	MA.	D0004 Notification of Failure to Obtain Reading.	Electronic or other agreed method.
3.9.1.4		Re-send EM Output File	MA	HHDC	Section 4.65.4 EM Output File (re-send data). D0003 Half Hourly Advances OR Section 4.65.4 EM Output File[44]	

[6] Recalculation of metering data will be required from time to time as more accurate data becomes available such as revised Summary Inventories, CMS Control Files, PECU Array data, CMS Event logs (limited to 28 days) and correction of standing data errors.

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3.9.2 Non-Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.9.2.1	On new connection / change of detail /sending of annual spreadsheet.	Send split EAC per MSID	UMSO.	Supplier, NHHDC.	D0052 Affirmation Of Metering System Settlement Details.	Electronic or other agreed method.
3.9.2.2	On receipt of D0052.	Validate D0052.If valid proceed to 3.9.2.6, otherwise 3.9.2.3.	NHHDC		In accordance with BSCP504 Non-Half Hourly Data Collection.	
3.9.2.3	If D0052 is invalid.	Send notification of invalid Metering System Settlement details.	NHHDC	UMSO, Supplier	D0310 Notification of Failure to Load or Receive Metering System Settlement Details.	Electronic or other agreed method.
3.9.2.4	On receipt of D0310.	Resolve missing or invalid data with NHHDC.	Supplier, UMSO	NHHDC.		Electronic or other agreed method.
3.9.2.5		On resolution, UMSO to resend data to Supplier and NHHDC.	UMSO.	Supplier, NHHDC.	D0052 Affirmation Of Metering System Settlement Details (Resend data).	Electronic or other agreed method.

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REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.9.2.6	If data valid and as agreed with Suppliers schedule	For each energised MSID, send the new or updated split EAC data. Resolve inconsistencies in accordance with BSCP504.	NHHDC.	NHHDA.	D0019 Metering System EAC/AA Data.	Electronic or other agreed method.
3.9.2.7	As required in order to correct previous data	Send corrected EAC data per MSID.[7] Where Effective from Settlement Date {EACDC} is more than 14 months old, amend Effective From Settlement date to the earliest date for which Final Reconciliation has not taken place. Proceed to 3.9.2.2.	UMSO	Supplier, NHHDC	D0052 Affirmation of Metering System Settlement Details	

[7] Backdated D0052s supersede previous data held by the NHHDC after the Effective From Settlement Date {EACDC}. Where any existing data is to be maintained, this must therefore be reaffirmed by issuing subsequent D0052s in the order by which they should be processed.

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3.10 SVAA sends Market Domain Data[8]

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.10.1	If required.	Request MDD data flows.	UMSO. MA.	MDDM.		Electronic or other method, as agreed.
3.10.2	Following 3.10.1~~When published by SVAA~~.	Send MDD data flows.	SVAA. ~~BSCCo.~~	UMSO. MA.	D0269 Market Domain Data Complete Set. D0270 Market Domain Data Incremental Set. ~~MDD Circular~~	Electronic or other method, as agreed.
3.10.3	Within 4 working hours of receipt of MDD data flows.	Send acknowledgement that data flows haves been received.	UMSO. MA.	MDDM.	P0024 Acknowledgement.	Electronic or other method, as agreed.
3.10.4	If file not readable and / or incomplete.	Send notification and await receipt of MDD data flows.	UMSO. MA.	MDDM.	P0035 Invalid Data.	Electronic or other method, as agreed.
3.10.5	On receipt of new MDD data flows.	Ensure- all MDD affecting the accuracy of Settlement -is accurately entered and used in performing its functions.	UMSO. MA.			Internal Process.
3.10.6	After receiving notification.	Send corrected MDD data flows. Return to 3.10.2.	SVAA.	UMSO. MA	Refer to 3.10.2 for data flows.	Electronic or other method, as agreed.
3.10.7	As soon as possible after data in correct format.	Update database.	UMSO.			Internal Process.

[8] This process applies only where an UMSO or MA requests MDD data flows from the SVAA. See Section 3.12 for the process relating to UMS-specific MDD items, such as Charge Codes and Switch Regimes, which are not contained within these data flows.~~The obligations on the MA defined above only apply where a MA has requested the specific data flows detailed above. Inaccuracies in the MDD items that are UMS specific such as Charge Codes and Switch Regimes shall be notified by the MA to the MDDM.~~

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3.11 UMSO sends annual spreadsheet of all UMS EACs to Supplier

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.11.1	By 10 WD before 30 June	Create and issue annual spreadsheet containing all UMS EACs for each MSID split by Settlement Register (using the appropriate Average Fraction of Yearly Consumption) Send confirmation of annual spreadsheet being sent	UMSO UMSO	Supplier BSCCo.	P0218 Collated Supplier UMS Registrations	Electronic or other method, as agreed. Post / Fax / Email
3.11.2	Upon receipt of information detailed above.	Compare EACs detailed in spreadsheet with latest EACs received from the Non Half Hourly Data Collector.	Supplier			Internal Process
3.11.3	Within 6 weeks of 3.11.2 if discrepancy identified	Instruct UMSO to resend correct EAC(s) to NHHDC.	Supplier	UMSO		Post / Fax / Email.
		If required, send correct EAC(s) to NHHDC		NHHDC	D0052 Affirmation of Settlement Details[9]	Electronic or other method, as agreed.
3.11.4	Following request from Supplier	Resend correct EAC(s) to NHHDC.	UMSO	NHHDC	D0052 Affirmation of Metering System Details [9]	Electronic or other method, as agreed.

[9] Where a D0052 Affirmation of Metering System Settlement Details, electronic or otherwise, is received from UMSO or Supplier for an Unmetered Supply, this value must be sent to the NHHDA on a D0019 Metering System EAC/AA Data for use in Settlement. The D0052 Affirmation of Metering System Settlement Details received from UMSO should be used in preference where available.

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3.12 Approval of New Switch Regimes and/or Charge Codes

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.12.1	When required	Receive application for a new Charge Code and/or Switch Regime.	Applicant[10]	BSCCo	Details of new Apparatus or Switch Regime.	Electronic or other method as agreed.
3.12.2	Following 3.12.1, if more information is required	Request more testing evidence or additional information from Applicant.	BSCCo	Applicant	Details of information or evidence required.	Electronic or other method as agreed.
3.12.3	Following 3.12.1 or 3.12.2 (if required)	Construct Charge Code and/or Switch Regime (seeking input from industry experts if required) Or Inform Applicant that a suitable Charge Code and/or Switch Regime cannot be constructed and discuss next steps.	BSCCo BSCCo	 Applicant	Details of new Apparatus or Switch Regime. Notification and possible next steps.	Internal Process. Electronic or other method as agreed.
3.12.4	Following 3.12.3 if Charge Code and/or Switch Regime constructed	Raise and progress MDD change in accordance with BSCP509 in relation to proposed new Charge Code and/or Switch Regime.	BSCCo		BSCP509.	Internal Process.
3.12.5	Following 3.12.4 if change to MDD is not approved.	Inform Applicant of decision and discuss next steps.	BSCCo	Applicant	SVG decision.	Electronic or other method as agreed.

[10] Although Charge Codes are published via MDD, "Applicant" in this case does not relate to MDD authorised signatories.

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REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.12.~~6~~5	Following 3.12.4 if Change to MDD is approved	Inform Applicant of decision. ~~If MDD change approved,~~ Send notification of decision, in accordance with BSCP509~~publish approved Charge Code and/or Switch Regime on BSC Website~~. Publish approved Charge Code and/or Switch Regime on BSC Website.	BSCCo BSCCo BSCCo	Applicant UMSO, MA	SVG decision. ~~BSC Website.~~BSCP509, MDD Circular. BSC Website.	Electronic or other method as agreed. ~~Internal Process.~~Electronic or other method as agreed. Internal Process.
~~3.12.6~~	~~Following 3.12.4 if change to MDD is not approved.~~	~~Inform Applicant of decision and discuss next steps.~~	~~BSCCo~~	~~Applicant~~	~~SVG decision.~~	~~Electronic or other method as agreed.~~
3.12.7	Following 3.12.6	Ensure all MDD affecting the accuracy of Settlement is accurately entered and used in performing its functions.[11]	UMSO MA			Internal Process.

[11] UMSOs and MAs should notify BSCCo as soon as possible of any inaccuracies in the published Charge Codes and Switch Regimes.

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3.13 Approval of Equivalent Meter

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.13.1	At any time	Submit request for EM approval.	Applicant	BSCCo	Details of EM type, including software and hardware versions.	Email, fax, post
3.13.2	Within 2 WD of 3.13.1	Confirm receipt and request any further details as necessary.	BSCCo	Applicant		Email, fax, post
3.13.3	Within 5 WD of 3.13.2.	Provide example of test schedule and details of EM Test Agents.	BSCCo	Applicant	EM test schedule, EM Test Agents.	Email, fax, post
3.13.4	Within 10 WD of receipt of 3.13.3.	Agree test schedule.	Applicant	BSCCo	Re-drafted schedule (if required).	As agreed
3.13.5	Within 10 WD of 3.13.4.	Agree EM Test Agent with BSCCo.	Applicant	BSCCo	Notification of EM Test Agent.	As agreed
3.13.6	Within 10 WD of 3.13.4.	Liaise with EM Test Agent to undertake EM testing.	Applicant	EM Test Agent	Notification of EM Test Agent.	As agreed
3.13.7	As agreed with Applicant.	Undertake testing and submit report to Applicant.	EM Test Agent	Applicant	EM Test Report.	Email, fax, post
3.13.8	Following completion of testing	Submit EM approval request to BSCCo	Applicant	BSCCo	Approval request, EM Test Report and any other supporting information.	Email, fax, post
3.13.9	At next opportune UMSUG meeting	Prepare and present report to UMSUG requesting recommendation for approval of EM.	BSCCo	UMSUG	UMSUG Paper.	Internal process

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REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.13.10	Within 5 WD of 3.13.9.	Notify Applicant of UMSUG recommendation. If EM approval is not recommended, liaise with Applicant and provide details of additional information or testing required. Return to 3.13.7 or 3.13.8 as necessary. If EM approval is recommended proceed to 3.13.11.	BSCCo	Applicant	UMSUG recommendation and any supporting information.	Email, fax, post
3.13.11	At next opportune Panel meeting	Prepare and present report to Panel recommending EM for approval or rejection as appropriate.	BSCCo	Panel	Panel Paper.	Internal process
3.13.12	Within 5 WD of 3.13.11	Notify Applicant of Panel decision. If EM not approved, liaise with Applicant and recommend next steps. If EM approved, proceed to 3.13.13.	BSCCo	Applicant	Panel decision and any supporting information.	Email, fax, post
3.13.13	Within 5 WD of 3.13.11	Update Approved EM list on BSC Website with details of approved EM	BSCCo		EM Approval Details.	Internal Process
3.13.14	Within 5 WD of 3.13.11	Communicate update to Parties and Party Agents	BSCCo	Parties Party Agents	EM Approval Details.	Email, fax, post

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3.14 Equivalent Meter Fault Reporting[12] - Investigating Inconsistencies

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.14.1	When a potential or inconsistency is identified for which the MA is responsible, which means that data may be or is missing and/or incorrect.	Advise of the potential for a fault or inconsistency.	Any Participant.	Supplier, HHDC. MA.	Details of the potential fault.	Electronic or other agreed method.
3.14.2	Within 5 WD of identification of a potential fault.	Investigate the potential fault and rectify it as required.	MA.			Internal Process.
3.14.3	As soon as reasonably practical following 3.14.2.	Report the fault and the dates covered by the fault and the date and time of rectification.	MA.	Supplier, UMSO, HHDC.	Details of the fault, including the dates covered by the fault and the date and time of rectification.	Electronic or other agreed method.
3.14.4	Following 3.14.2, where it is possible to re-run the EM system to rectify the error.	Send corrected data calculated in accordance with 3.9.1.1.	MA.	HHDC.	Corrected data, D0003 Half Hourly Advances **OR** Section 4.6~~5~~.4 EM Output File.	Electronic or other agreed method.

[12] Failures related to PECU arrays are covered in 4.6.2.

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3.15 Proving HH Unmetered MSID

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.15.1	As required.	Install and test communication equipment.	MA.		In accordance with the Supplier's requirements.	As agreed.
3.15.2	On each occasion that an HHDC is appointed, who is not currently appointed to another MSID to which the MA is also appointed.	Compare HH data output from the EM against test data obtained by the new HHDC.	MA.	New HHDC.	Create and send Trial Data	Internal Process.
3.15.3		Record the Proving Test and report any errors found to the MA.	New HHDC.	MA.	Proving Test Results.	Electronic or other agreed method.
3.15.4		Rectify any errors reported by the HHDC as a result of a Proving Test and repeat 3.15.2.	MA.			Internal Process.

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4. Appendices

4.1 Categories of Unmetered Apparatus

Note that the categories of Unmetered Apparatus can be found in the OID and associated Charge Codes may be found on the Charge Codes and Switch Regimes page of the BSC Website in the Operational Information Charge Code spreadsheet.

4.2 Switch Regimes

Note that the Switch Regime is described in the OID and a complete list may be found on the Charge Codes and Switch Regimes page of the BSC Website in the Operational Information Switch Regime spreadsheet.

4.3 Not used

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4.4 Allocation of Unmetered Supplies to Profile Classes and Standard Settlement Configurations

UMS Description	Category	Standard Settlement Configuration		Profile Class	Time Pattern Regime (TPR) Id		TPR Start Time	PR End Time	Average Fraction of Yearly Consumption (AFYC)
		GSP Groups Other Than _P	GSP Group _P (North Scotland)		GSP Groups Other Than _P	GSP Group _P (North Scotland)			
Continuous	A	0428	0925	Non-domestic LF >40%	00258	00307	22.00	06.00	36% of EAC
					00259	00259	06.00	22.00	64% of EAC
Dusk to dawn	B	0429	0926	Domestic unrestricted	00260	00308	19.00	09.00	76% of EAC
					00261	00261	09.00	19.00	24% of EAC
Half night and pre-dawn	C	0430	0928	Domestic unrestricted	00264	00310	16.00 and 05.00	01.00 09.00	98% of EAC
					00265	00265	01.00 and 09.00	05.00 16.00	2% of EAC
Dawn to dusk	D	0431	0927	Domestic unrestricted	00262	00309	16.00	04.00	4% of EAC
					00263	00263	04.00	16.00	96% of EAC

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4.5 Calculation of EACs

The EAC in kWh for each settlement register for each MSID shall be calculated by the UMSO as follows:-

4.5.1 Calculation of EACs for Apparatus other than storage heating

(a) For each Charge Code and Switch Regime combination multiply the rating in circuit watts of the Apparatus by the applicable Percentage Dimming Level of the Apparatus by the number of items of that Apparatus in the Summary Inventory by the annual operating hours of the Switch Regime in that GSP Group and divide by 1000.

(b) Allocate the kWh of each Charge Code and Switch Regime combination to the SSC of the Switch Regime and sum by SSC to arrive at the EAC per MSID.

(c) The MSID EAC will be split between the appropriate TPRs utilising the appropriate AFYC to obtain the EAC per Settlement Register.

(d) The UMSO shall pass this data directly to the appointed Supplier and the appropriate NHHDC.

(e) The split EAC should be recalculated each time the UMSO is notified of a material revision to the Detailed Inventory, when that revision has been agreed with the Customer.

NB. Charging Hours - 8766 hours per annum to account for Leap Years.

4.5.2 Calculation of EACs for storage heating Apparatus

(a) For storage heating Apparatus that has an UMS certificate (e.g. Budgetwarmth), the EAC for each installation is obtained by multiplying the installed load in kW by the number of charging hours per annum by a cycling factor of 0.95. These installation EACs are summed by SSC to arrive at the EAC per MSID.

(b) Proceed as per (c), (d) and (e) above, using an AFYC appropriate to TPR being employed.

NB. Charging Hours - 8766 hours per annum to account for Leap Years.

4.5.3 Calculation of EACs for Temporary Supplies

Where an MSID is allocated for a temporary UMS which is being used for up to 3 or 4 periods of the year only (e.g. Christmas lighting), the EAC shall be calculated as if it was connected throughout the year. For avoidance of doubt it should be noted that the Settlement processes will not settle the full amount of the annualised EAC but a proportion of the EAC that relates to when the MSID is energised. It shall be assumed that there are 365 days in the year, i.e. leap years shall be disregarded and the calculation therefore is as follows:

EAC = Charging Code Circuit Watts x Daily Burning Hours x 365

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This EAC should then be split according to the percentages for a continuous (Category A) supply as shown in section 4.4

The appointed Supplier shall follow the energisation and de-energisation procedures at the time(s) of connection and disconnection respectively to reflect the actual usage. Note that the process above is distinct from temporary supplies connected and disconnected frequently throughout the year on a random basis (e.g. temporary traffic lights), where the EAC shall be calculated using the agreed number of annual operating hours, in consultation with the Customer.

4.5.4 Consumption Adjustments following LDSO Inventory Audits

Where an audit of a customer's Detailed Inventory has been undertaken by the LDSO in accordance with the best practice document: Managing Unmetered Energy Street Lighting Inventories (MUESLI):

Then the Customer will be deemed to have agreed that the revised Detailed Inventory calculated by the LDSO relative to that particular Unmetered Supply is that agreed between the LDSO on whose Distribution System or Associated Distribution System the Unmetered Supply takes place and the Customer taking such supply as defined in paragraph 8.2.4 of Section S of the BSC.

The LDSO shall then review and adjust (if appropriate) the customer's EACs, for NHH Settlement, or Summary Inventory and/or CMS Control File (as appropriate), for HH Settlement, as defined within the MUESLI document available at www.theilp.org.uk.

4.6 Equivalent Meter Specification

The specification below is insufficient for a Code of Practice but describes the required functionality of Equivalent Meters used to provide Settlement consumption data for Unmetered Supplies.

New hardware and software systems complying with the relevant sections of this Appendix 4.~~5~~6 may be developed and submitted to the UMSUG and the Panel for approval in accordance with Section 3.13 Approval of New Equivalent Meter. Once approved, a system may be used in conjunction with any other hardware and software so long as there is no material impact on the Equivalent Meter's original approval. Where such impact is believed to be material, further approval should be sought.

It should be noted that with regard to dynamic meters using CMS Data, approval may be sought for either:

- A dynamic meter, i.e. a system that meets the requirements of an MA system as specified in this BSCP;
- A CMS, i.e. a system that meets the requirements of a CMS as specified in this BSCP; or
- A system that combines the functions of a CMS and a dynamic meter MA system in a single application, i.e. that meets all the requirements as specified for both Dynamic meters and CMS Systems as specified in this BSCP.

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A list of approved Equivalent Meter types can be found on the BSC Website.

~~4.6.1 Hardware - PECU Arrays~~Equivalent Meter - Calculation

Equivalent Meters undertake the calculation as defined below:

For the Summary Inventory effective on the relevant day for that Sub-Meter, for either:

- each CMS controlled item, or
- each Charge Code & Switch Regime combination

multiply the number of items by the circuit watts (full or dimmed as appropriate) for the relevant Charge Code by the seconds attributable (full or dimmed as appropriate) to the Switch Regime and divide by 1,000 to determine the kWh in each half hour.

For each Sub-Meter, the seconds attributable to the Switch Regime in each half hour are derived, in order, from:

(1) For CMS controlled items, the switching times and power level information in the event file received from the CMS System (or where events have not been received at the time of the calculation, default arrangements defined in this BSCP);

(2) For PECU Array determined items, the switching events recorded by the PECUs representing the Switch Regime in the Primary PECU Array (or the Secondary PECU Array where data from the Primary Array is not available and where a Secondary Array is defined) which passes validation. Where data is not available from the Primary or Secondary PECU Array, switching times from the default Switch Regime shall be used in accordance with 3 & 4 below;

(3) For items with a Switch Regime not determined by a PECU Array but linked to the sunset/sunrise times, then the times as defined by the Switch Regime in conjunction with the Astronomical Almanac; or

(4) For items with fixed switching times, then those times defined by the Switch Regime.

For each MSID, sum the kWh for each combination described above for each Sub-Meter, round the calculation to one decimal place.

Repeat for each half hour of the Settlement Day.

An identical process shall occur for kVArh data.

Note: The EM will log all switching actions to at least the nearest minute.

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4.6.1 Hardware - PECU Arrays

4.6.1.1 PECU Array Siting Procedure

Overview

The MA shall maintain and operate the PECU array or, as the case maybe, PECU arrays used for a particular MSID. The siting of the PECU arrays will be agreed between the UMSO and the MA and be located in an area with a high density of apparatus unless otherwise agreed between the UMSO and the MA.

Siting Factors

The factors to be considered when determining the location and number of PECU arrays are:

(a) Centres of population and hence concentrations of load;

(b) Distance from another PECU array;

(c) Topography;

(d) Customer boundaries;

(e) GSP Group boundaries;

(f) Total load controlled; and

(g) Access

Sharing PECU Arrays

One PECU array may provide data for more than one EM. Also, more than one PECU array may provide data for the same EM. There will be instances when one PECU array will service the requirements of part of, or more than, one Customer.

Where a shared PECU array is being used by two or more different MAs, then one should take the lead and ensure that the others are informed of any changes to PECUs or other details.

Determining the Use of Multiple or Single PECU Arrays

The number of PECU arrays may be subject to decisions on the number of PECU types that can be populated in the PECU array. More than one PECU array may be required if the population of PECUs for a customer cannot be reasonably represented on a single PECU array of 30 PECUs. Furthermore, the size of the customer's area might require more than one PECU array to facilitate accurate calculation of Burn Hours. It is possible for the Meter Administrator to calculate the Annual Burn Hours for any latitude and longitude. If the differences between the proposed Array sites are very small (i.e. less than +/- 2%) then this would suggest that one Array should be sufficient. If actual Burn Hours are available for existing Arrays this data could also be used.

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Research

The following research may be carried out to determine the siting of PECU arrays.

If there is latitude and longitude information contained in the customer's Detailed Inventory for each item of Equipment, then it should be possible for the UMSO (and/or MA) to perform a load weighted longitude/latitude calculation to determine the ideal location of a single PECU array.

Where detailed Equipment location is not known, then it is possible to perform the calculation described above using published population numbers for the major towns in the customer's area.

PECU Array Variations

In considering any variation of the number of PECU arrays as stated in the overview paragraph above, the parties shall have due regard to the need:

(a) to reasonably minimise costs;

(b) to achieve the required accuracy in each half hour.

If a variation in the number and location of PECU arrays is proposed by the MA but is not agreed by the UMSO research may be carried as stated above. While such research is carried out and during any period of discussions, a supply in accordance with this BSCP may be commenced on the basis of the lesser of the number of PECU arrays proposed.

Failing any agreement after research and discussion the matter may be referred to the Panel for resolution.

4.6.2 PECU Array Operating Procedure

Overview

Before a Supplier can provide the Customer with a Half Hourly Unmetered Supply the PECU array installations must be operational and a MA appointed. The PECU arrays must conform to the specification as set out in the paragraph Specification for PECU arrays.

Types of PECUs

There are different types of PECUs, with different operating characteristics. Therefore, so that the operation of the PECU arrays reflect reality:

(a) PECUs used in the PECU array are to be representative of type, manufacturer and age of the population they are representing.

(b) The PECUs in the PECU array are to be proportional to the various types in the area covered by the PECU array.

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(c) The number and types of PECUs will be determined by the MA in accordance with this section.

PECU Representation in Equivalent Meter

The operation of each PECU is deemed to be proportional to the population on the PECU array of that type of cell, e.g. if there are 8 cells of one type, then the operation of each one will represent the operation of one eighth i.e. 12.5% of the load controlled by that type of cell.

Where the calculation indicates that the load controlled requires less than one PECU in the PECU array, it may be omitted from the PECU array (and default arrangements should then apply). Where the calculation indicates that the load controlled requires more than one PECU in the PECU array, it shall be populated with at least two PECUs.

Multiple PECU Arrays

If more than one PECU array is used per Summary Inventory, then the operation of a PECU cell is deemed to be proportional to the population of that type of PECU controlled load within the area covered by that PECU array. Therefore, where more than one PECU array is used per Summary Inventory, the Summary Inventory must identify which PECU array is controlling each item.

PECU Array Maintenance and Upkeep

Each PECU array shall be installed, maintained and operated in accordance with Good Industry Practice. When contacting the PECU array, the MA shall ensure that any difference between the PECU array second counter and the EM clock time equivalent does not exceed 20 seconds in any 24 hour period. When the difference does exceed 20 seconds, the PECU array switching data should not be retrieved and the EM should be reset such that time on PECU array and the EM are synchronised.

The MA shall monitor the performance of the PECU arrays.

Where the monitoring of the PECU arrays indicates that a single PECU is out of line with other PECUs of identical type in the same PECU array to such an extent that the PECU is no longer representative then such PECUs shall be removed from the calculation and a retrospective calculation will be made using the remaining cells. Failed or unrepresentative PECUs should be replaced at the next available opportunity.

At least annually, or in the event of a significant change to the Summary Inventory, the MA shall ensure that the PECU arrays are populated with PECUs in accordance with this section.

PECU Array Failure

If PECU data is not available then data from an appropriate PECU array or default data shall be used.

In the event of data recovery the MA will rerun EM and submit the corrected meter readings to the HHDC.

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4.6.2.1 Minimum Specification for PECU Arrays

Number of Photocells per PECU array	30
Arrangement of Cells	Any arrangement which ensures no over shadow of one cell on another.
Mounting Platform	Flat platform which can be fitted on a flat roof or supported on a single upright for wall mounting. All the construction must be coated with a weather coated finish.
Mounting for Photocells	NEMA photocell sockets and 6 blanking plates to cater for miniature cells where required, in a waterproof housing.
Waterproof Housing	All equipment externally located must be protected by a weatherproof enclosure.
Data Collection	To capture the switching on and off times of each cell at time of operation for a minimum of 7 days and 28 events per cell. Rolling Barrel (data overwrites once the logger is full).
Clock or time counter	The PECU array must have a clock or time counter that can be synchronised with the EM.
Operating Temperature	-20 to +50 degree Celsius.
Communication Protocol	Determined by the EM to permit interrogation for remote data collection.

4.6.3 Equivalent Meter Functionality

Equivalent meters are of two types:-

(a) Passive meters which allocate the Unmetered consumption across the half hourly periods by a mathematical relationship of annual burning hours to the daily time of sunrise and sunset; and

(b) Dynamic meters which allocate the Unmetered consumption across the half hourly periods by reference to the operation of a number of actual PECUs, or by making use of actual switching times reported by a Central Management System. In either case the equivalent meter defaults to a passive mode using calculated times of switch operation in the event of the actual switching times not being available.

4.6.3.1 Functions of a Passive Meter.

(a) The Meter Administrator shall be able to add, delete and modify all information required to define each MSID and to relate it to the Customer, LDSO, Supplier and Data Collector.

(b) The Meter Administrator shall be able to add, delete and modify Summary Inventory data for each MSID electronically. Summarised inventory data shall comprise:

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MSID;

Effective From Date;

Inventory title and/or reference;

Charge Code;

Switch Regime;

Total number of units of each Charge Code/Switch Regime combination.

(c) The Meter Administrator shall be able to add, delete and modify Charge Code and their associated circuit watts and circuit Volt Amperes reactive (VArs) for both full load circuit loading and dimmed load ratings as appropriate.

(d) The Meter Administrator shall be able to add, delete and modify Switch Regimes and their associated operating times. The system shall be populated using the offsets and fixed times defined in the OID associated spreadsheets for each Switch Regime.

(e) The system shall use the average latitude and longitude information and a sunrise/sunset algorithm to calculate the time of sunrise and sunset for each day within two minutes of the sunrise and sunset times as derived from the Astronomical Almanac.

(f) The system shall calculate, as defined in 4.5.1, the import kWh and import kVArh in each half hour period in UTC for each MSID.

(g) The system shall provide an output file in the format shown in 4.6~~5~~.4 for provision to the appointed HHDC.

(h) The system shall provide an audit trail of changes to data held.

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4.6.3.2 Functions of a Dynamic Meter using PECU Data

In addition to the functions of a passive meter listed above, the following are required for a dynamic meter using PECU data:-

(a) The system shall be able to use any one PECU array for the calculations of more than one MSID.

(b) The system shall be able to use more than one PECU array for the calculations of one MSID.

(c) In the event that a PECU in a PECU array fails to operate, the system shall compensate in its calculations by dividing that portion of load allocated to the faulty cell between the functioning cells of the same type as the failed cell.

(d) If PECU array data is not available for any day then a data from an alternative specified PECU array shall be used for the calculations. If that data is not available then default PECU Switch Regime shall be used. The appropriate default Switch Regimes are defined in the OID associated spreadsheets.

(e) The system shall maintain details for each PECU in a PECU array relating to location, type, manufacturer, date of manufacture and model number.

(f) The system shall be able to download data from the PECU array.

(g) The system shall monitor PECUs on the PECU array and advise the MA of any failed units.

(h) The system shall monitor the PECU array second counter for time keeping and advise the MA when the deviation exceeds the warning level as determined by the MA.

(i) The MA shall be able to produce switching times from a decoded PECU array file.

(j) The system may provide a facility to apply time switch operations in accordance with a normal distribution about the nominal switching times. The standard deviation of the normal distribution shall be set by the MA.

(k) The system shall provide facilities to retrospectively recalculate data for re-submission to Data Collectors.

(l) The system shall be synchronised to UTC.

4.6.3.3 Functions of a Dynamic Meter using CMS Data

A dynamic meter may use the detailed switching and load information recorded and reported by a Central Management System to allocate Half Hourly consumption data. In this case the CMS itself may be operated by the MA or the Customer, however the MA system (the system that is used to calculate the consumption), must be operated by a Meter Administrator Qualified in accordance with BSCP537, who retains the overall

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Settlement responsibility for the quality of the data submitted by the Customer via the CMS.

In addition to the functions of a passive meter listed above, the following requirements apply. Each requirement may relate to the CMS, the MA system or both. Where the two systems are combined into a single application, all requirements shall apply unless otherwise stated.

(a) The MA system shall allow the Meter Administrator to add, delete and modify control information for each MSID electronically. This control file shall be provided to the Meter Administrator by the UMSO in the following format:

Filename: controlmmmmmmmmyyyymmdd.log

where:

mmmmmmm = Sub-Meter ID (alphanumeric)

yyyymmdd = date of inventory

log = file extension

with all characters in lower case

File header: HMMMMMMMMYYYYMMDDVVV

where:

H = header identifier, capital H

MMMMMMM = Sub-Meter ID (lower case alphanumeric)

YYYYMMDD = effective from date

VVV = version number

File body: UUUUUUUUUUUUNNNNNNRRRCCCCCCCCCCCCC

where:

UUUUUUUUUUUU = CMS Unit Reference (alphanumeric)

NNNNNN = Number of items

RRR = Switch Regime (999 or 998)

CCCCCCCCCCCCC = Charge Code

File trailer: TNNNNNN

where:

T = trailer identifier, capital T

NNNNNN = total number of lines including header and trailer

The CMS Unit Reference shall be a 12-digit alphanumeric field that acts as a unique identifier of the unit under CMS control and to which the Charge Code and Switch Regime pertains. The CMS Unit Reference may have upper and lower case characters but their uniqueness is not case sensitive, so upper and lower case are treated as the same character. The structure of the CMS Unit Reference is to be agreed between the Customer and the UMSO, and may make use of existing information provided in the Detailed Inventory (e.g. National Street Gazetteer road codes) in combination with

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other data in order to ensure its uniqueness. The first digit of the CMS Unit Reference shall not be the letters 'H' or 'T', to ensure that the MA system cannot confuse the CMS Unit Reference with the file header or trailer.

The Number of Items is the same as that contained in the Detailed Inventory and shall identify the number of items (e.g. lamps) associated with each CMS Unit Reference.

The Charge Code maintained by the Meter Administrator shall be the normal code for the lamp running at full load. The Switch Regime shall be set to 999 to denote the use of switched equipment (i.e. dusk to dawn), or 998 to denote continuous burning for that MSID.

The CMS controller devices operating each item of equipment should be summed and provided as a row(s) in the file body. Each different type of CMS controller shall have its own Charge Code and will be assigned a continuous Switch Regime of 998 and a CMS Unit Reference of 'Control ' (please note that this is 'Control' followed by five blank spaces ' ' and not five underscores).

(b) The CMS shall record the operational switching times and power levels set for each unit and shall make this data available to the Meter Administrator in the form of an operational event log on a daily basis. The log shall include the CMS Unit Reference, the time and date at which the load was switched and the power level expressed as a percentage of the circuit watts defined in the Operational Information Document for the relevant Charge Code. Where the CMS is unable to record and report the power level set for any unit, e.g. because of a control failure, it may include the unit in the operational event log but note the failure by use of an information flag.

(c) Where the CMS and MA system are operated as separate applications, the switching time and load information shall be provided to the Meter Administrator in the following standard format text file. Where the CMS and MA system are integrated, the application must be able to produce the file on request for testing and audit purposes, however other methods may be used for transferring data between the two applications on a routine basis:

Filename: mmmmmmmyyyymmddvvv.log

where:

mmmmmmm = Sub-Meter ID (alphanumeric)

yyyymmdd = date to which the events pertain

vvv = version number

log = file extension

with all characters in lower case

File header: HMMMMMMMYYYYMMDDVVV

where:

H = header identifier, capital H

MMMMMMM = Sub-Meter ID (lower case alphanumeric)

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YYYYMMDD = date to which the events pertain

VVV = version number

File body: UUUUUUUUUUUUHHMMSSPPP.PPI

where:

UUUUUUUUUUUU = CMS Unit Reference (alphanumeric)

HHMMSS = time in hours, minutes and seconds, in UTC throughout the year

PPP.PP = percentage of base power i.e. undimmed power level applied to the lamp, to 2 decimal places

I = information flag (alphanumeric)

File trailer: TNNNNNNN

where:

T = trailer identifier, capital T

NNNNNNN = total number of lines including header and trailer

All lines must be the correct length and terminated with a carriage return, including all tail lines.

The information flag 'I' in the file body may be used to provide any further information relating to the data contained within the operational event log, e.g. if there are omissions, errors, etc. An alphanumeric value must be provided, although the value used for this information flag and how it is used by the CMS or the MA are currently not prescribed under the BSC, so the CMS manufacturer can specify its use/structure (and agree any such functionality with the relevant MA).

For each CMS Unit Reference which is reported in a log file the time (HHMMSS) for each entry must differ.

Any revisions to previously-reported data for events of one or more CMS Unit Reference (e.g. after repair of a fault or re-establishment of communications) shall all be provided in an incremental contiguous file version number for the date to which the events pertain. Typically, subsequent file versions are incremental updates containing only that data for CMS Unit References for which data has changed or was not previously reported. On occasions it may be necessary for a subsequent file version to be a complete refresh of the previously reported CMS Unit Reference event data for that date. The approach to be used, and the way in which updated information should be identified, shall be as agreed between the CMS operator and the MA.

(d) The MA system shall calculate, by an approved method, the import kWh and import kVArh consumption in each half hour period in UTC for each MSID using the switching times and power level information reported in the operational event log.

(e) The MA system shall generate an exception list detailing any CMS Unit References reported in the control file but which are not contained in the operational event log. The exception list shall be produced for each day of the report for which any CMS Unit References are missing, and shall be provided

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to the ~~UMSO and~~ Customer on a monthly basis as a matter of routine, and additionally upon request from the UMSO or Customer.

(f) In the event that all or part of the operational event log is not available for any reason, the MA system shall apply data representative of the Switch Regime indicated in the control file provided by the UMSO (i.e. 999 or 998). This regime shall be applied for each of the affected Settlement Days affected.

(g) The MA system shall recalculate the half hourly consumption once data from previous days becomes available and shall submit this revised data to the HHDC. Furthermore, where any data has been found to be in error, revised data should also be submitted to the HHDC once it becomes available.

(h) The CMS and MA system shall provide an audit trail of changes to data held.

(i) The hardware and software associated with any Central Management System shall be installed, maintained and operated in accordance with Good Industry Practice, with clocks synchronised to UTC and accurate to within ± 20 seconds.

(j) The Meter Administrator shall provide ad-hoc extracts of the CMS operational event data received from such system to the UMSO on request.

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4.6.4 Equivalent Meter Output File Format

Description	PICTURE	Comment
HEADER RECORD:		
Record Type	X(1)	(H)eader
In-Station Id.	X(2)	From System Id
Reading Date	9(8)	YYYYMMDD
Time Periods in Day	9(2)	48
Filler	X(1499)	Spaces
CR/LF		
DETAIL RECORD:		
Record Type	X(1)	(D)etail
MSID	X(13)	13 digits from supply number
Register Value	9(10)	Spaces Occurs 20 times, one for each register
Register Sort Key	X(2)	Spaces
Impulse reading data group		Occurs 48 times
kWh	X(8)	Format nnnnnn.n. Space means no reading
kWh edit flag	X(1)	"A" if reading supplied else blank
Kvarh-lag	X(8)	Format nnnnnn.n. Space means no reading
Kvarh-lag edit flag	X(1)	"A" if reading supplied else blank
Kvarh-lead	X(8)	Format nnnnnn.n. Space means no reading
Kvarh-lead edit flag	X(1)	"A" if reading supplied else blank
CR/LF		
TRAILER RECORD:		
Record Type	X(1)	(T)railer
Record Count	9(8)	Includes Header & Trailer
Hash Total	9(12)	Sum of the integer values of (kWh + kvarh-lag + kvarh-lead)
Filler	X(1491)	Spaces
CR/LF		

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4.6.5 Summary Inventory File Format

The summary inventory file shall be provided to the Meter Administrator by the UMSO for equipment which is not included in a CMS Control file. One file should be provided for each Sub-Meter. The file is a text fixed width file with the following file body:

File body: MMMMMMMMSSSCCCCCCCCCCCCCTTTTTT

where:

MMMMMMM = Sub-Meter ID (alphanumeric)

SSS = Switch Regime (alphanumeric as defined by this document)

CCCCCCCCCCCCC = Charge Code (numeric as defined by this document)

TTTTTT = Number of items with that combination of Switch Regime and Charge Code

It should be noted that there is no defined structure for the file name and there are no headers or trailers records in the file format.

4.7 Standard File Format for Unmetered Supplies Detailed Inventories

Note that the Standard File Format for Unmetered Supplies Detailed Inventories can be found in the document 'Unmetered Supplies Operational Information' which is available on the BSC Website.

4.8 Switch Regime Annual Operating Hours by GSP Group

Note that the Switch Regime annual operating hours by GSP Group can be found on the BSC Website.

4.9 Meter Administrator Performance Standards

4.9.1 This Appendix describes those critical processes for which performance standards have been set and on which Suppliers are required to report standards of performance actually achieved. The Appendix is tabular in form and should be read as follows.

(a) Reading *across* the table, the:

(i) third and fourth columns define, respectively, the *process* and any *sub-process* for which standards have been agreed and against which performance shall be measured;

(ii) first column assigns a *serial* number to the process and sub-process for ease of subsequent reference;

(iii) second and fifth columns define, respectively, whether any flow of data is *originated* by a Supplier, Supplier Agent, BSC Agent or LDSO and whether it is *received* by a Supplier, Supplier Agent, BSC Agent or LDSO;

(iv) sixth column records the *performance standard* against which the performance of a MA will be measured;

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(v) seventh column defines how the *performance* of an MA *will be measured*; and

(vi) eighth column defines whether the measurement of performance will be by means of:

– a *report* sent by a Supplier, Supplier Agent (under the sanction of the Supplier), BSC Agent or LDSO to the Performance Assurance Board;

– an *inspection* by the BSC Auditor, Technical Assurance Agent or other authorised party.

(b) Reading *down* the table, serials are assigned to one of three groups, that define whether the measurement of the performance takes place:

(i) at an *inbound interface* of a Supplier, Supplier Agent, BSC Agent or LDSO;

(ii) at an *outbound interface* of a Supplier, Supplier Agent, BSC Agent or LDSO; or

(iii) in a process that is *internal* to a Supplier, Supplier Agent, BSC Agent or LDSO.

Where the performance standard in the sixth column is described as ‘Complete, valid, in correct format and accurate within Timescales’ and the measure in the seventh column is described as, say, ‘99% within 15 days’, the 99%’ refers to the percentage of occasions on which the process is completed within the required timescale and is 'valid, in correct format and accurate'.

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4.9.2 Table of Meter Administrator Performance Standards

Serial	Sender	Process	Sub-process/Data Flow	Recipient	Performance Measure	Service levels	Reporting Method
1	Meter Administrator.	3.14 Equivalent meter Fault Reporting.	Fault repairs.	Data Collector.	Time to rectify material faults (i.e. those which affect data quality.	(i) 95% rectified within 2 working days of notification or discovery of fault. (ii) 99% rectified within 15 working days of notification or discovery of fault.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
2	Meter Administrator.	3.10.3 MDD.	Acknowledgement.	Supplier Volume Allocation Agent.	Acknowledge receipt.	100% of acknowledgements within 4 working hours in accordance with BSC Procedure BSCP508.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
3	Meter Administrator.	3.4.5 Termination of Appointment of Meter Administrator.	Provision of Sufficient Data.	Incoming Meter Administrator.	Complete, valid, correct format and accurate within Timescales.	(i) 95% within 5 working days in accordance with BSC Procedure BSCP520 (ii) 99% within 15 working days in accordance with BSC Procedure BSCP520.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
4	Meter Administrator.	3.1.13 Metering Obligation.	Operation of Equivalent Meter.	Unmetered Supplies Operator.	Within 5 WD validate Summary Inventory and/or CMS Control File (as appropriate) against OID..	(i) 95% of requests within 5 working days (ii) 99% within 15 working days in accordance with BSC Procedure BSCP520.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.

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Serial	Sender	Process	Sub-process/Data Flow	Recipient	Performance Measure	Service levels	Reporting Method
5		3.1.15 Metering Obligation.	Operation of Equivalent Meters.	Supplier.	Notify failure to provide information for Initial Settlement.	100% within 1 working day of Initial Settlement Run.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
6		4.5.2 Metering Obligation.	Provision of PECU array.		Compliance with BSCP520.	100% to BSCP520.	Provision of data under PSL100 section 10.2.1.
7	Meter Administrator.	3.7.5 Metering Obligation.	Confirmation of energisation status change.	Data Collector, Supplier.	Complete, valid, correct format and accurate within Timescales.	(i) 95% within 5 working days 3 in accordance with BSCP520; (ii) 99% within 15 working days in accordance with BSCP520.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
8	Meter Administrator.	3.9.1.2 Interface to Other Agents.	Metering Equipment Technical Details.	Data Collector.	Complete, valid, correct format and accurate within Timescales.	(i) 95% within 5 working days 3 in accordance with BSCP520; (ii) 99% within 15 working days in accordance with BSCP520.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.
9		3.14.4 Interface to Other Agents.	Error Rectification.	Data Collector.	Notification of data availability following re-run.	95% within 1 working day of re-run; 99% within 5 working days of re-run.	Report, sent by the Supplier. Provision of data under PSL100 section 10.1.2.

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